

# College Road & S. 17<sup>th</sup> Street Milling and Resurfacing Project

A cooperative project  
between NCDOT and the City  
of Wilmington

# Pre-Project communication

- ◆ Conversations with NCDOT Maintenance personnel about which Roads are being proposed for milling and resurfacing
- ◆ Conversations with City maintenance personnel about problems currently occurring in field
- ◆ Involve NCDOT Division Traffic Engineer and field personnel to get agreement on scope of work
- ◆ Coming to agreement that detection should be replaced to current standard (support from TEB Raleigh on replacing to standard)

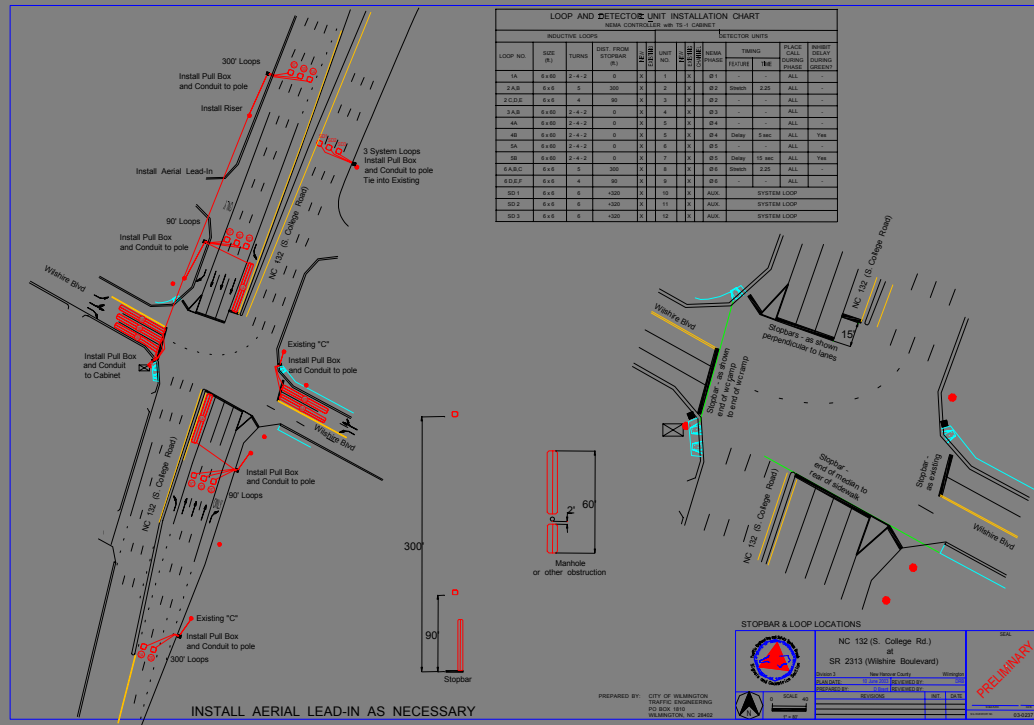
# Inventory and other pre bid work

- ◆ Examine existing signal plans and determine whether intersection reflects what is shown on plan
- ◆ Identify pavement marking deficiencies
- ◆ Examine cabinet to determine number of additional harnesses and detectors that will be needed, look at existing lead-in arrangements
- ◆ Make sure phasing and operations are correct
- ◆ Identify in pavement obstacles, such as manholes, hand valves and other underground utilities that may need to be avoided
- ◆ Make sure posted speed now is same as design speed on existing plan – affects where main street loops go.

# Plan detail prep

- ◆ Update geometric plan to reflect added lanes not shown on signals, new driveways, poles, manholes or other obstacles (we were able to use new orthographic aerial photography)
- ◆ Identify where signal was not installed per original plan and determine if revision is necessary
- ◆ Prepare plan revisions for review by TEB if rephasing or realignment of approaches can be done without changing loop layout or quantity
- ◆ Show new detectors with proposed lead-in route to pole or cabinet, this is a detail, not a full signal plan and is taken from the signal design manual
- ◆ Coordinate with local Division Traffic Personnel

# Sample Plan Detail





# Detailed Estimate for DOT

- ◆ Using spreadsheet, identify most cost-effective way of getting loops back to cabinet, involve maintaining personnel, find out what is best for maintenance on location by location basis
- ◆ Determine where existing pole lines and cable routes can be used for lead-in runs, overhead is almost always cheaper than sawcut or underground, and rarely gets cut by backhoe
- ◆ Remember that direct buried 14-2UF is not acceptable lead-in
- ◆ Provide to DOT Signal Maintenance Personnel for review
- ◆ This estimate gives the DOT person a good idea of the cost of traffic signal related work (be prepared for sticker shock reaction)
- ◆ By preplanning, sawcut in pavement is minimized. Sawcut is frequently the most expensive per foot cost of detection systems and most exposed to pavement cut/failure related maintenance.

# Communication Prior to construction

- ◆ Attend Pre-construction meeting and become familiar with DOT Resident Engineer, Project Inspector, and the contractor's representative(s)
- ◆ Have preliminary plan details ready to get to contractor and DOT
- ◆ Be ready to start "dynamic plan process"

# Communication during Construction

- ◆ Let signal technician on call know what is happening
- ◆ Prepare to locate existing loops, milling machine may miss some, these will likely not get replaced
- ◆ Determine what will be milled on a daily (or nightly) basis. Be prepared to program recalls should detector fail in off position
- ◆ Be prepared to revise details to fit construction restraints



# Installations and recalls

- ◆ Inspect each nights milling the next day
- ◆ Keep a daily punchlist of things that didn't quite go as planned.
- ◆ Be prepared to communicate with contractor who may be "spotting" tonight's work today
- ◆ If possible use TOD recalls to have movements on recall before milling gets loop, better to have unnecessary green than "won't go green"
- ◆ Contractor may not be familiar with your specific controller and not able to program recall, have Tech on call ready for this

# Inspections - meg values, labeling and tagging

- ◆ We agreed that contractor was responsible for getting lead-in to cabinet, City forces do hook up wiring.
- ◆ Loops meg tested at splice to lead in-point
- ◆ Punch list all loops that did not test good at cabinet and give list to DOT inspector and contractor.
- ◆ Have contractor label all lead-ins to reflect all loop numbers attached to that lead-in
- ◆ Be prepared for loops attached to wrong lead-ins, most work done at night, contractor will make mistakes

# Final Product

- ◆ DOT gets the new roadway surface that it wants, gets the new detection configurations that make signals work most safely, efficiently
- ◆ City gets loops and plans that reflect what is in field, where it is and what it is hooked to, making future maintenance easier
- ◆ Loops get installed under final overlay, protecting both the loop and the pavement from premature failure
- ◆ Preplanning reduces amount of time that signal runs pre-timed, reducing driver frustration. It also allows traffic engineer to modify coordinated timing plans to reflect real offsets caused by non-actuated phases during milled state

# Public's Benefit

- ◆ Public gets more efficient, safer signal that operates according to current design standards
- ◆ Congestion during construction is managed with recalls and revised coordination patterns, disruption to public is minimized
- ◆ Future maintenance calls are minimized since loops go in under final riding surface
- ◆ Reduced interference on long lead in runs since old unshielded lead-in was replaced.



# Documentation

- ◆ Final “Plan of Record” produced for each location and submitted to DOT for approval
- ◆ Good opportunity to update signal design to reflect current operational philosophy, such as provision of lead-lag phasing to benefit coordinated operation
- ◆ Signal can be revised to reflect current traffic patterns
- ◆ New lead-in routes are documented making location of facilities easier

# Lessons learned

- ◆ Communication during all phases of the project is paramount.
- ◆ Premark markings that are moving by proposed plan, not by existing markings.
- ◆ Reference to things that will be there after road is milled
- ◆ Be prepared to work with Resident and contractor since Specs for signals and resurfacing sometimes conflict
- ◆ .

# Lessons learned II

- ◆ Possible need to generate specs for rural and specs for urban milling procedures
- ◆ Involve local utilities in preplanning, it lets them schedule pavement cuts and inventory before milling starts
- ◆ Be prepared to communicate and compromise